***REMARKS***

Claims 1-3 and 9-16 are pending in the above-identified application.

***Summary of Interview***

A personal Interview was conducted between Applicants' representative (Eugene T. Perez) and the Patent Examiner on June 5, 2003. As stated in the comments of the Interview Summary Record, the focus of the discussion at the Interview was as follows: "Discussed prior art and claim 1 in depth. Discussed the melt viscosity size, and deformation of the article." It is additionally noted that the Examiner indicated during the interview that in her view, the language of the present claims, such as for example claim 1, fails to patentably distinguish the claimed product from the articles described in the prior art, i.e., U.S. Patent No. 5,683,639 (Ebnesajjad '639). Thanks are extended to the Examiner for taking time from her schedule to conduct the interview.

***Issues Under 35 U.S.C. § 103(a)***

Claims 1-3 and 9-16 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ebnesajjad '639. This rejection is traversed for the following reasons.

*Summary of Position of Patent Examiner*

Taking into account the comments stated by the Examiner at the Interview summarized above, as well as the written comments in the Final

Office Action of March 10, 2003, it appears to be the position of the Patent Examiner that the melt viscosity and block deformation properties recited in the present claims and graphed in Figure 4 are inherently present in the molded polytetrafluoroethylene (PTFE) article disclosed by Ebnesajjad '639. It further appears to be the position of the Patent Examiner that the larger size of the cylinder product of the present invention of at least 800 mm could be obtained by a person skilled in the art who desired a product having these dimensions after having reviewed the disclosure of Ebnesajjad '639.

*Summary of Reasons Supporting Patentability*

Although it is agreed that Ebnesajjad '639 discloses as similar production method for a similar product, it turns out that an attempt to follow the procedures of Ebnesajjad '639 in order to obtain a cylindrically-shaped product having a length of at least 800 mm as in the present invention necessarily results in a defective product which necessarily has melt-viscosity and block deformation properties outside the parameters defined in the present claims, such as for example claim 1. Any reference to enclosed Exhibit A (a modified version of Fig. 4 of the present application) shows that Ebnesajjad '639 describes a process that forms a product necessarily outside the scope of the present claims. Additionally, Ebnesajjad '639 fails to address any problems with regard to reducing deformation for a PTFE cylinder with a length of at least 800 mm, which problems are both addressed and overcome in accordance with the present invention. Consequently, Ebnesajjad '639

fails to disclose any embodiments that inherently have the features recited in the present claims, fails to address any problems associated with forming the PTFE cylinder of the present invention, and fails to provide a motivation to one skilled in the art to attempt to form the PTFE cylinder of the present invention, such that significant patentable distinctions exist between the present invention and Ebnesajjad '639.

*Detailed Reasons Supporting Patentability*

Ebnesajjad '639 discloses a method of producing small block-shaped articles, whereby the described method provides improved utilization of sintering ovens by shortening the cycles as noted at Col. 2, lines 20-38, for example. Ebnesajjad '639 discloses generally that granular PTFE resin is first compression molded below the melting point and then, in a second stage, fused by using a forced-air convection oven, so as to sinter the resin at a temperature above the melting point thereof, as noted at the bottom of Col. 1. In the various examples described beginning at Col. 5 of Ebnesajjad '639, it is disclosed that,

> A finely divided PTFE resin satisfying ASTM D-4894, Type II (Teflon TFE fluoropolymer resin grade 7A, DuPont Company) and having a melting point of about 340°C was used in all of the following tests, either as natural resin or as the base for filled compounds.... Sintering cycles used in whole or in part were those of Procedures D and F of ASTM D-4894... [Col. 5, lines 8-13 and 22-24].

Ebnesajjad '639 discloses at Col. 6 that various billets were subjected to sintering procedures, wherein the billets had a "3-inch (7.6-cm) diameter and 1.5-inch (3.8 cm) height". It is clear from a

review of Cols. 5-6 of Ebnesajjad '639 that the billets were sintered in a static position without any movement.

Ebnesajjad '639 fails to disclose or suggest how to make a PTFE cylinder having a length of at least 800 mm as in the present invention, while advantageously avoiding deformation problems which occur when producing PTFE articles of this large size. Note the recognition of problems associated with deformation when producing these types of articles as discussed at pages 1-2 of the present specification. It is also clear for the following reasons that attempting to follow the procedures of Ebnesajjad '639 necessarily results in the production of a PTFE cylinder that is outside the scope of the graphed area shown in Fig. 4, as illustrated in Exhibit A.

The size of the billet of Ebnesajjad '639 is 3 inch (diameter) x 1.5 inch (height) (cf. column 6, lines 20-21), which is much smaller than the molded article of the present claim 1 (height: at least 800 mm). The pressure applied to the bottom surface of the small billet, which is 8.4 $g/cm^2$ (= 2.2 $g/cm^3$ x 3.8 cm), is much smaller than the pressure applied to the bottom surface of the molded article having the height of 800 mm, which is 176 $g/cm^2$ (= 2.2 $g/cm^3$ x 80 cm). Accordingly, the deformation amount of a billet having a small size near the bottom surface is very small, but the deformation amount of a molded article having a large size near the bottom surface is very large.

Since the static sintering method of Ebnesajjad '639 is quite different from the baking method of the present invention, the deformation amount of product in Ebnesajjad '639 is outside of the

deformation amount defined in the present claim 1. In the static sintering method of Ebnesajjad '639, the billet is subjected to the high temperature which is equal to or higher than the melting point PTFE resin (342°C, cf, column 5, line 11), as shown in Table 1 at column 6. For example, the billet of Example 1 of Ebnesajjad '639 is heated according to Procedure D of Table 1. If the billet has the large size as in the present invention, the billet deforms because the billet remains in a static position without any method for retaining the shape of the billet during the heating to the temperature of at least melting point. Even if the billet is positioned in the insulation shell after removal from the oven, the deformation is not significantly diminished or lost.

If the billet of Ebnesajjad '639 has the same large size as in Example 1 of the present specification (height: 1000 mm, diameter: 420 mm), such a large billet would deform using "Procedure D," just as Comparative Examples 1 to 3 of the present specification deformed. The billet of Ebnesajjad '639 made of PTFE resin grade 7A has a melt viscosity of $1.8 \times 10^9$ poise (based on inspection of a commercial brochure), which results in a block deformation amount outside of the deformation defined in the present claim 1, based on extrapolation from Comparative Examples 1-3 (which also employed static sintering techniques). This is shown in Exhibit A, which shows that a large billet of Ebnesajjad '639 would exhibit a larger deformation amount than the deformation amount (that is, 7%) defined in the present claim 1.

It is clear from the above discussion that Ebnesajjad '639 fails to disclose any examples that inherently include the features of the present invention or that could be made to include the features of the present invention, because Ebnesajjad '639 fails to address any issues regarding deformation features. Consequently, Ebnesajjad '639 fails to provide a basis for alleging *prima facie* obviousness, because all the elements of the present claims (e.g., claim 1) fail to be disclosed or suggested by Ebnesajjad '639. In re Vaeck, 20 USPQ2d 1438 (Fed. Cir. 1991); MPEP 2143. Further, Ebnesajjad '639 fails to suggest any technique for achieving the advantageous reduction in deformation achieved by the present invention which further undermines the allegation of obviousness. In re Kotzab, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); MPEP 2143.01.

In addition to the above, it is noted that Ebnesajjad '639 mentions nothing regarding problems associated with deformation characteristics of billets formed according to the process described therein. Consequently, Ebnesajjad '639 fails to provide any adequate basis for a motivation to one skilled in the art to form the PTFE cylinder of the present invention. Therefore, significant patentable distinctions exist between the present invention, as recited in the present claims, and Ebnesajjad '639.

It is submitted for the reasons stated above that the present claims define patentable subject matter such that this application should now be placed into condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Eugene T. Perez (Reg. No. 48,501) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Enclosure: Exhibit A